REMARKS

Claims 1-16 are pending in this application. Claims 10-16 are withdrawn from consideration due to an election of species requirement. Thus, only claims 1-9 are under consideration in the present application, with claim 1 being the only independent claim. By this amendment, the specification, Fig. 7, and claims 1-4 and 6 are amended. Reconsideration in view of the above amendments and following remarks is respectfully solicited.

I. THE DRAWING OBJECTIONS ARE OBVIATED

The Office Action objects to the drawings under 37 CFR 1.83(a). The objection is respectfully traversed.

Applicant respectfully submits that the objection to the drawings relating to the features in claim 10 is moot in light of the non-election of claim 10 in the present application. Thus, the objection to the claim 10 features should be withdrawn.

As for the objection to the "first and second field effect transistors" recited in claim 8, applicant respectfully submits that these features are indeed shown in the drawings. For example, Fig. 7 of the present application shows both bipolar transistors and field effect transistors that can be substituted therein for the bipolar transistors. Specifically, the field effect transistors are connected with their gates, drains and sources corresponding to the bases, collectors and emitters of the first, second bipolar transistors tr61, Tr62, respectfully. (see applicant's specification, page 37, line 25 to page 38, line 7).

However, in order to expedite prosecution of the present application, Fig. 7 is amended to shown Figs. 7a and 7b wherein the field effect transistors are explicitly shown in Fig. 7b.

Accordingly, withdrawal of the objection to the drawings is respectfully requested.

II. THE CLAIMS SATISFY THE REQUIREMENTS OF 35 U.S.C. §112, 2nd PARAGRAPH

The Office Action rejects claim 10 under 35 U.S.C. §112, 2nd paragraph. This rejection is respectfully traversed.

Applicant respectfully submits that the rejection of claim 10 under §112 is moot in light of the non-election of claim 10 in the present case.

Accordingly, withdrawal of the rejection of claim 10 under 35 U.S.C. §112, 2nd paragraph is respectfully solicited.

III. THE CLAIM OBJECTION IS OBVIATED

The Office Action objects to claim 6 because of minor informalities contained therein. This objection is respectfully traversed.

Applicant respectfully submits that the amendment to claim 6 obviates the objection to claim 6. Specifically, claim 6 is amended to recite that each bipolar transistor has a base-collector junction.

Accordingly, withdrawal of the objection to claim 6 is respectfully requested.

IV. THE CLAIMS DEFINE PATENTABLE SUBJECT MATTER

The Office Action rejects: (1) claims 1-4 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,895,305 to Longman, Jr. (hereafter Longman); (2) claims 1 and 5 under 35 U.S.C. §102(b) as being anticipated by Japanese Patent No. 2000304631 A to Mizuno (hereafter Mizuno); and (3) claims 6-9 under

35 U.S.C. §103(a) as being unpatentable over Mizuno. These rejections are respectfully traversed.

Applicants respectfully submit that both Longman and Mizuno fail to teach or suggest each and every feature as set forth in the claimed invention. In particular, both Longman and Mizuno at least fails to teach or suggest a power amplifier, as set forth in independent claim 1.

Claim 1 recites a power amplification circuit having a power amplifier and a negative feedback circuit. The negative feedback circuit is connected between a signal input terminal and a signal output terminal of the power amplifier. An impedance of the negative feedback circuit depends on a signal voltage occurring across the negative feedback circuit.

For example, an input power signal, Pin, fed to the signal input terminal of the power amplifier is amplified by the power amplification circuit and sent out as an output power signal, Pout. The gain of the power amplifier depends on the input power signal Pin. An impedance device exhibits an increasing impedance Z1 with an increasing input power signal Pin. Thus, the impedance device has a variable characteristic that can suppress any gain decreases in the amplification circuit.

In contrast to the claimed invention, Longman merely discloses a clamping circuit having a voltage amplifier and a feedback path with unequal time constants for charge and discharge periods. As such, Longman enables the clamping of pulses of duty cycles of 50 percent and over.

However, Longman has absolutely nothing to do with the amplification of power wherein gain decreases are suppressed. Longman's amplifier 31 is merely a voltage amplifier, not a power amplifier. (see Longman, col. 3, lines 52-56).

In addition, Longman fails to teach or suggest the impedance of the negative feedback circuit depending on a signal voltage occurring across the negative feedback circuit, as set forth in the claimed invention. The impedance of Longman's feedback path is not dependent on the signal voltage flowing across such path but is fixed by the circuit components 33, 34, 35, 36, 37 and 38. Furthermore, Longman fails to teach or suggest that the impedance of the negative feedback circuit increases with an increasing input signal power to the power amplifier. Longman only discloses an input voltage, not an input power, because Longman is only concerned with using a voltage amplifier, not a power amplifier.

In addition, Longman fails to teach or suggest that the negative feedback circuit consists essentially of a diode and a capacitance device, as set forth in claim 3; or consists essentially of a diode, a capacitance device, and a feedback resistor, as set forth in claim 4.

According to MPEP §2131, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the …claims." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913 (Fed. Cir. 1989). The elements must be arranged as required by the claims, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants respectfully submit that the Office Action has failed to establish the required *prima facie* case of anticipation because the cited reference, Longman, fails to teach or suggest

each and every feature as set forth in the claimed invention.

As for Mizuno, like Longman, Mizuno fails to disclose the use of a power amplifier. Mizuno only discloses using an operational amplifier with diodes having high resistance. As such, Mizuno's circuit is directed towards obtaining high DC stability by using a large amount of negative feedback. However, Mizuno's operational amplifier circuit is not designed to deliver maximum power to a load, but rather maximum voltage gain. As such, Mizuno's circuit is distinguishable from the claimed invention in that no power amplification is being obtained and no power amplifier is being used.

Again, according to MPEP §2131, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ...claims." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913 (Fed. Cir. 1989). The elements must be arranged as required by the claims, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Applicants respectfully submit that the Office Action has failed to establish the required *prima facie* case of anticipation because the cited reference, Mizuno, fails to teach or suggest each and every feature as set forth in the claimed invention.

To establish a *prima facie* case of Obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify

the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP 706.02(j).

Applicant respectfully submits that not only does Mizuno fail to teach or suggest each and every feature as set forth in the claimed invention, but Mizuno in combination with the asserted known art fails to make the presently claimed invention obvious.

Applicant submits that the Office Action has improperly used applicant's invention as a road map to pick and choose features from out of the air and paste the chosen features together to arrive at the claimed invention, even though Mizuno does not provide any teachings, suggestion or motivation to make the modification. For instance, the Examiner is attempting to combine asserted known in the art circuits with the teaching of Mizuno's to arrive at the claimed invention, as set forth in claims 6-9. Applicant respectfully disagrees with the Examiner's assertions.

For instance, the Office Action has failed to provided any motivation for combining the asserted known in the art circuits with the operational amplifier and feedback circuit of Mizuno to arrive at the claimed invention. Mizuno is completely silent about such a substitution of circuits and applicant respectfully submits that it is not well known in the art to substitute such circuits in an amplification circuit as claimed.

Applicant respectfully submits that the combination of Mizuno with known in the art circuits fail to teach or suggest each and

every feature as set forth in the claimed invention and fails to make the claimed invention Obvious.

Applicants respectfully submit that not only does the references fail to teach or suggest each and every feature as set forth in the claimed invention, but that one of ordinary skill in the art would not have been motivated to combine/modify the teachings of Mizuno because there is no teaching or suggestion in any of the references regarding how or why one would modify such systems to arrive at the claimed invention.

Applicant respectfully submits that independent claim 1 is allowable over Longman and Mizuno for at least the reasons noted above.

As for each of the dependent claims not particularly discussed above, these claims are allowable for at least the reasons set forth above regarding their corresponding independent claims, and/or for the further features claimed therein.

Accordingly, withdrawal of the rejection of claims 1-9 under 35 U.S.C. §102(b) and 103(a) is respectfully solicited.

V. CONCLUSION

In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Carolyn T. Baumgardner (Reg. No. 41,345) at (703) 205-8000 **to schedule a Personal Interview**.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment from or credit

any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17; particularly, the extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASH & BIRCH, LLP

By _____ #41271
Terrell C. Birch, #19,382

P.O. Box 747
Falls Church, VA 22040-0747
(703) 205-8000

TCB/CTB/mpe
0020-4933P

Attachments: Version with Markings to Show Changes Made
Drawing Correction Authorization Request w/
Figs.7a and 7b

VERSION WITH MARKINGS SHOWING CHANGES MADE

IN THE SPECIFICATION:

Please replace the paragraph beginning on page 24, line 19, with the following rewritten paragraph:

--Figs. 7a and 7b [is a] represent circuit diagrams of a power amplification circuit in a sixth embodiment of the invention;--

Please replace paragraph [0062] beginning on page 37, line 14, with the following rewritten paragraph:

--Figs. 7a and 7b [shows a] illustrate circuit diagrams of a power amplification circuit 61 in a sixth embodiment of the invention. In Fig. 7a, [This] this power amplification circuit 61 of the sixth embodiment is made up by using base - emitter junctions of a first bipolar transistor Tr61 and a second bipolar transistor Tr62 in place of the diodes D51, D52 of the power amplification circuit 51 of the fifth embodiment shown in Fig. 6. In this sixth embodiment, Tr61 and Tr62's collectors are short-circuited to their bases, respectively, but those collectors may be in the open state. Also, base - collector junctions of bipolar transistors may be used as the diodes. Further, as shown in Fig. 7b, it is also possible to use field effect transistors in place of the first, second bipolar transistors Tr61, Tr62, where the field effect transistors are connected with their gates, drains and sources corresponding to the bases, collectors and emitters of the first, second bipolar transistors Tr61, Tr62, respectively, and with the gate - source junctions or gate - drain junctions used as the diodes.--

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A power amplification circuit comprising:

a power amplifier; and

a negative feedback circuit connected between a signal input terminal and a signal output terminal of the power amplifier, wherein

impedance of the negative feedback circuit depends on a signal voltage occurring across the negative feedback circuit.

2. (Amended) The power amplification circuit according to Claim 1, wherein

the impedance of the negative feedback circuit increases [as the signal voltage occurring across the negative feedback circuit increases] with an increasing input signal power to the power amplifier.

3. (Amended) The power amplification circuit according to Claim 1, wherein

the negative feedback circuit is a series connection circuit [in which] consisting essentially of a diode and a capacitance device [are] connected in series.

4. (Amended) The power amplification circuit according to Claim 1, wherein

the negative feedback circuit is a series connection circuit [in which] consisting essentially of a diode, a capacitance device and a feedback resistor [are] connected in series.

6. (Amended) The power amplification circuit according to Claim 5, wherein

the first and second diodes of the series connection circuit are each constituted of a base - emitter junction [and a] or a base - collector junction of one bipolar transistor[, respectively].